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Preface

A question, "CO_2 skyrocketing or fossil fuels diving?" may be a question symbolic of the fact that our world has been facing both environmental and resource restrictions. Scientists and engineers working in fields of carbonaceous resources are therefore responsible for contribution to development and permeation of technologies toward minimization of fossil fuels consumption and its environmental impact.

Gasification is normally defined as a thermochemical process for converting solid carbonaceous resources such as coal, petroleum residue, biomass, and industrial/municipal organic waste into syngas consisting mainly of hydrogen and carbon monoxide. It is also true that the gasification is an only way to integrate different carbonaceous resources together with thermal energy into the syngas as a platform common to energy and chemicals/material. It is therefore believed that the gasification can be a core or hub of sustainable energy-material systems/networks in future industries and societies.

With a main purpose to provide valuable opportunity for scientists and engineers to exchange up-to-date knowledge in the science and engineering of gasification, The International Symposium on Gasification and Its Application, iSGA, started at Shanghai, China in 2008. The 2010 symposium was the second one of the series, held in Fukuoka, Japan, from 5 to 8, December, 2010, and jointly organized by Research and Education Center of Carbon Resources, Kyushu University, Japan, Fuels and Energy Technology Institute, Curtin University, Australia, and Institute of Process Engineering, Chinese Academy of Sciences, China.

The iSGA 2010 accepted 95 academic and industrial papers from Japan, China, Australia, Canada, USA, UK, Spain, Sweden, Korea, Malaysia, and Indonesia, which covered a broad range of topics such as Ash & Slag, Biochar & Torrefaction, Biomass Gasification, CO_2 Capture, Coal Gasification, Hydrothermal Systems, Pyrolysis, Reaction Kinetics & Mechanism, Reactor Design and Simulation, Tar Reforming, and Trace Elements. After a rigorous peer-review process, 22 selected papers are published in this special issue of Fuel. These papers are on a range of topics over Kinetics and Mechanism of Char Gasification, Gasifier and Gasification Process, Syngas Treatment, Ash from Gasification, Catalytic Gasification and Reforming, and Torrefaction and Mild Pyrolysis.

The Second iSGA was financially supported by three Japanese organizations: Center-Of-Excellence in Novel Carbon Resource Sciences, Kyushu University, 148th Committee on Coal and Carbonaceous Resources Utilization Technology, Japan Society for the Promotion of Science, and Japan Coal Energy Center. As guest editors, we would like to acknowledge the professional assistance provided by Professor Akira Tomita, Associate Editor of *Fuel*, Editorial Office of *Fuel*, and all of the reviewers, in facilitating this special issue. We are also grateful to all of the authors for their contributions to the special issue.

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